

ABSTRACT

Modularized intra-system architectures for printer and multifunction peripheral (MFP) devices are based on disintegrating traditionally highly integrated systems into separate system components which incorporate immerging packet-switched interconnect technologies, such as the open standard RapidIO™. An MFP device has an internal modular architecture which includes each of the main systems integrated onto separate ASIC chips. The systems are interconnected through a switch fabric which routes packet-based data between the systems based on destination addresses embedded in the packets. The packet-based data is routed between the switch fabric and each of the systems through switch IO buses which provide a dedicated, point-to-point connection between the switch fabric and each system. The modular MFP/printer architectures using packet-switched interconnect technology have lower transaction latency, higher bandwidth, and fewer pins per system than is possible using traditional shared multi-drop bus architectures, and achieve data transfer rates in the gigabyte per second range.